Noella Horo

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Education

- **Carnegie Mellon University – School** (Pittsburgh, PA)
  B.S. in Computer Science, Expected Graduation: 2027
  Courses: *Space Robotics | Computer Vision | Data Structures & Algorithms | Machine Learning*

Projects/Research Experience

Research Assistant, Physical Intelligence Lab, CMU (Jan 2025 - Present)

- Leading a project on proprioceptive tracking with a KINARM, adapting continuous tracking methods from visual tasks to improve data collection efficiency from 30+ mins to **< 3** mins.

Research Project (July 2022 - Present)

- Collaborated with a PhD team at Oxford University to develop a program automating tricuspid valve segmentation from MRI scans using Python and MATLAB; research pending publication.

CMU Space Robotics (2024)

- Developed an image processing pipeline for lunar environment mapping, utilizing High Dynamic Range (HDR) and COLMAP 3D modelling software for a NASA rover.

Braille Score (Hackathon – 'Amplify') (2024)

- Created an application that converts sheet music PDFs into braille using computer vision, enhancing accessibility for visually impaired musicians. As well as to midi files from handwritten or printed scores.

Astronaut Health Monitoring System (HackCMU Hackathon – 'Space') (2023)

- Developed and prototyped an astronaut health monitoring system by analyzing excreta using sensors and Arduinos for early detection of potential health issues in space. Won Special Mention and award worth **$600**.

Work Experience

ML/DS Intern, Onsite - Eternal Ltd (food delivery marketplace) (May – Aug 2025)

- Engineered and deployed a real-time NER system for Zomato (**23M+** monthly users) search to extract structured intent from natural language food queries using GLiNER and ONNX.
- Achieved low-latency performance (~20–60ms) and integrated with existing search infrastructure to power smarter, intent-driven recommendations, enhancing user experience.

Open-Source Contributor – uProtocol Project, Eclipse Foundation (May – Aug 2025)

- Developed a high-performance message transport system in Rust for connected vehicles, using zero-copy for instant transmission of large data (like camera and LIDAR feeds).
- Enabled shared-memory transmission of large Protobuf-encoded messages between processes with serialization, to improve performance for ADAS/AD applications.
- Integrated seamlessly into Eclipse's protocol stack, contributing to production-grade automotive software.

Teaching Assistant, Web Application Development, CMU (Aug 2025 – Present)

- Mentored 60+ students in full-stack engineering principles such as React, REST APIs, and cloud deployment.
- Held weekly office hours, and contributed to refining course content and project infrastructure.

Undergraduate Tutor, 15-151 Discrete Mathematics, CMU (Jan – May 2025)

- Tutored one-on-one, assisting in problem solving and mastering a rigorous core CS course.

Software Engineering Intern, Onsite – Moneyboxx Finance Ltd (July 2022)

- Prototyped a cow muzzle recognition system using YOLO and Haar Cascade for farmer insurance and lending.

Consulting Intern – Deloitte Consulting (Jan – April 2022)

- Analyzed UI/UX metrics for a digital maturity project for Google, improving publishing workflows.

Skills

Technical: C, Python, Rust, SML/NJ, LaTeX, SQL, R, Julia, OpenCV, TensorFlow, ML, HTML/CSS, JS, Django, NER, NLP
Developer Tools: Git, AWS, Firebase, VSCode
Soft skills: Project Management, Public Speaking, Leadership, Writing, Debating

Extracurricular

Resident Advisor – CMU Summer Program (June – Aug 2024)

- Mentored residents and developed engagement programs to create an inclusive community.

Tedx Speaker (2023)

- Delivered a compelling presentation on loss, resilience and taking charge of the future.

Dance (2024 - 2025)

- Competed and won over 13 awards in Silver Ball Ballroom dance competition.
- Performed at various venues and qualified for NDDL nationals in Vegas